

An Easier Route for Choosing Appropriate Health Care Technology?

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The responsibility for making system procurement decisions is passing from corporate computing centres, traditionally equipped with technical expertise, to individual healthcare personnel with limited technical experience. It can also be argued that the often lengthy procedures for procurement established in the former, centralised settings are too bureaucratic and time-consuming for the smaller, dispersed, lay institutions in which these individuals work and who will regard procurement decisions as being secondary in nature to their core business.

The problem of choosing the appropriate technology is also further compounded by:

- the increasing diversity and complexity of systems being offered,
- the continual process of change which is assailing the would-be purchaser, and
- the lack of relevant evaluation methodologies that can be used by non-technical personnel.

The above trend suggested a principal reason for evaluating healthcare technology to be the obtainment of assessment results which could then be directly used to inform lay purchasers in their decision making process, either for the purpose of procuring new systems or for upgrading their existing systems.

SAPPHIRE was a research project directed at this problem, and was centred upon Primary Healthcare in the UK; a domain exhibiting all of the above difficulties, and one which both simultaneously benefits and suffers from a rich supply of computerised patient record systems. The SAPPHIRE research investigated ways of empowering the GPs' choice of system by means of evaluation; the project prototyping a combination of specification, bench-testing and presentation methods to lend support to the GP's decision making process.

At the start of the project no national certification scheme or accreditation existed in the UK. However, it was believed that this would happen, and the task of SAPPHIRE was seen as providing methods and tools to facilitate such a process in due course. Neither was there any consensus of requirements, nor agreed benchmarks nor any framework for the evaluation process. For further details see [1,2,3].

For the SAPPHIRE evaluation to fully assist the procurement process it requires both a comprehensive specification, and associated tests to be produced and used together. The central idea being that a software toolkit permitted a purchaser to select their own specific requirements from a descriptive specification (which was mapped to the tests performed upon suppliers' systems) and thereby produce the 'best

matches' of requirements against products. It was recognised that the extensive nature of this type of evaluation scheme would be a significant undertaking requiring considerable resource to implement, and the active involvement of both supplier and purchaser.

It was envisaged, therefore, that the Toolkit would enable the GP to easily access the considerable amount of technical information about requirements and about the systems which suppliers market to satisfy these requirements. By the end of the project, however, 826 requirements had been collected by a combined, deep/shallow approach to elicitation, yet this was by no means exhaustive. As the specification grew, it became readily apparent that only the most enthusiastic of GPs would actually be willing to spend the time or have the patience to use the Toolkit to select and weight every requirement.

A natural progression was the provision of an on-line '20 question' profile questionnaire, which sought to aggregate requirements to types of clinician's office. We therefore built a mock, prototype Practice Profile tool which front-ends the browsing tools and the weighting techniques used in the Toolkit. Initial reactions to this mock questionnaire have been encouraging, but the assumption that there exists only a small number of questions which determine a purchasing strategy has to be proved. At this point the same objective has been achieved as the more lengthy procedure, albeit with a reduction in precision, and the profile requirements can be immediately matched with the capabilities of a suppliers' systems. More analysis work is now required to see how significant these questions are, and to find how best to pose questions to elicit an accurate individual perception so as to ensure that the mapping to the specification is correct. Comparisons are also required between the traditional procurement approach and that of SAPPHIRE, so as to confirm which is the easier of the two routes.

- 1 Kay S, Redman R, McWilliams A, Bradley P, Daniels A. SAPPHIRE: scenarios, architecture, and process. *Computer Methods and Programs in Biomedicine* 43 1994:217-225
- 2 Kay S. The SAPPHIRE Assessment Method and Support Tools, In: Ross M, Brebbia, CA, Staples G, and Stapleton J, eds. conference proceedings SQM95, measuring and maintaining Quality, Computational Mechanics, 1995:349-362
- 3 McWilliams A, Wright I. Testing of patient record systems for GMP in the UK. In: Ross M, Brebbia, CA, Staples G, and Stapleton J, eds. conference proceedings SQM95, measuring and maintaining Quality, Computational Mechanics, 1995:363-372